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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,825	09/22/2003	Giuseppe Pedretti	8245.060	1009

30589 7590 03/30/2006

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EXAMINER
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PHAN, THIEM D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/667,825

Applicant(s)

PEDRETTI ET AL.

Examiner

Tim Phan

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-12 and 25-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-12 and 25-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 1/25/06 has been entered.

A new Office Action on the merits of Claims 1-4, 6-12 and 25-35 now follows. Since the claims are directed to a Product-by-Process, applicants are advised to revisit MPEP 2113.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

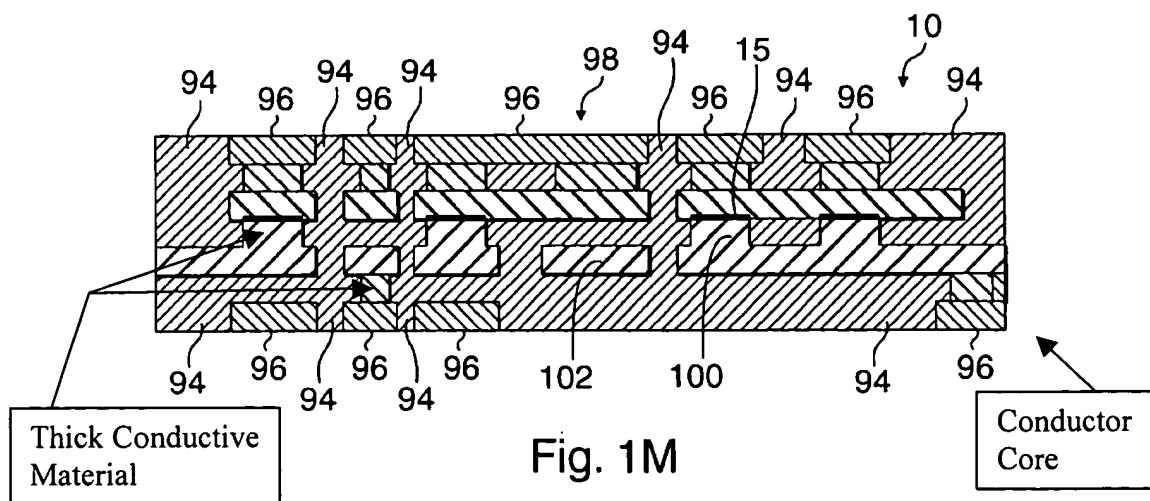
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1-3, 6-8, 25-27 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Patel et al (US 6,623,651).

**As applied to claims 1 and 25,** Patel et al teach a printed circuit board, comprising:

- a conductor core (Fig. 1M, see below) containing a thin base (Fig. 1M, 102) of electrically conductive material and areas of thick conductive material (Fig. 1M, see below);
- a sublayer (Fig. 1M, 94) of electrically insulating material to create a flat laminate (Fig. 1M, 94), wherein the areas of thick conductive material (Fig. 1M, 1) are positioned adjacent to and covered by the sublayer (Fig. 1M, 94); and,
- predetermined printed circuits (Fig. 1M, 98) having both thick conductor traces (Fig. 1M, below) formed from the thick conductive material and fine resolution traces from the thin base (Fig. 1M, 102).



**As applied to claims 2 and 26,** Patel et al teach that the conductor core and predetermined printed circuits comprise copper (Col. 3, line 45).

**As applied to claims 3 and 27,** Patel et al teach a printed circuit board with conductive core (Fig. 1M, see above). The functional steps of Claims 3 and 27 “... forming of the conductive core ... electrically conductive base.” (Lines 1-3) are considered to be a manner in which the article for printed circuit board to be produced so this manner of production does not distinguish over the structure/article of Patel et al and Patel et al at a minimum suggest the claimed article invention.

**As applied to claim 6,** Patel et al teach a printed circuit board with conductive core (Fig. 1M, see above). The functional steps “... bonding is performed ... insulating sublayer.” (Claim 6, lines 2 & 3) and “... hot pressing ...” (Claims 29 & 30) are considered to be a manner in which the article for printed circuit board to be produced so this manner of production does not distinguish over the structure/article of Patel et al and Patel et al at a minimum suggest the claimed article invention.

**As applied to claims 7 and 31,** Patel et al teach a printed circuit board with conductive core (Fig. 1M, see above). The functional steps of Claims 7 and 31 “... removing of the conductive ... etching.” (Lines 1 & 2) are considered to be a manner in which the article for printed circuit board to be produced so this manner of production does not distinguish over the

structure/article of Patel et al and Patel et al at a minimum suggest the claimed article invention.

**As applied to claim 8**, Patel et al teach a printed circuit board. The functional step of “... applying a solder mask ... mask.” (Lines 1 & 2) are considered to be a manner in which the article for printed circuit board to be produced so this manner of production does not distinguish over the structure/article of Patel et al and Patel et al at a minimum suggest the claimed article invention.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 9-12, 28-30 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al in view of Bokisa (US 5,928,790) or vice versa.

**As applied to claims 4 and 28**, Patel et al teach a printed circuit board, including the sublayer (Fig. 1C, 22) of electrically insulating material, which reads on Applicants' claimed invention except for the sublayer of electrically insulating material that comprises sheets of glass fiber reinforced with resin, which is well known in this art.

Bokisa teaches a multilayer circuit board with an insulative sheet of resin-bonded, glass-reinforced substrate (Col. 1, lines 31-33) in a multilayer board, which is old art.

It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the two teachings by applying a glass-reinforced and resin-bonded layer as non-conductive layer, as taught by Bokisa, in a multilayer circuit, as taught by Patel et al, in order to isolate and strengthen the circuitry.

**As applied to claims 9-12 and 32-35**, Patel et al in view of Bokisa teach a multilayer circuit board, including the conductor circuitry thickness about four one-thousandths of an inch (Patel et al; col. 3, line 48) or 2 to 4 microns (Bokisa; col. 5, lines 32 ff.) except for assigning multiple different thickness ranges for the conductor traces.

It is mere matter of design choice to assign different thickness ranges for the conductor traces and it is held that the claimed temperature ranges are not so critical as to be novel or unobvious over the thickness range recited in the Patel et al and Bokisa's arts.

**As applied to claims 29 and 30**, Patel et al in view of Bokisa teach a printed circuit board with conductive core (Fig. 1M, see above). The functional steps "... bonding is performed ... insulating sublayer." (Claim 6, lines 2 & 3) and "... hot pressing ..." (Claims 29 & 30) are considered to be a manner in which the article for printed circuit board to be produced so this manner of production does not distinguish over the structure/article of Patel et al in view of Bokisa and Patel et al in view of Bokisa at a minimum suggest the claimed article invention.

***Response to Arguments***

6. Applicants' arguments with respect to claims 1-4, 6-12 and 25-35, filed on 1/25/06, have been considered but are moot in view of the new grounds of rejection.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Phan whose telephone number is 571-272-4568. The examiner can normally be reached on M - F, 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

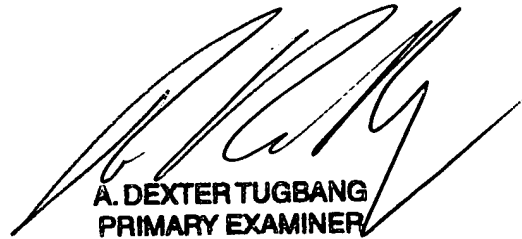
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tim Phan  
Examiner  
Art Unit 3729

tp  
March 21, 2006



**A. DEXTER TUGBANG**  
**PRIMARY EXAMINER**